THE MOTOR AGE

VOL. I. CHICAGO, OCTOBER 17, 1899. NO. 6.

ENTERED AT THE CHICAGO POST OFFICE AS SECOND-CLASS MATTER.

THE MOTOR AGE is published every Tuesday by THE CYCLE AGE COMPANY, at 324 Dearborn St., Chicago.
Subscription price in the United States, Canada, and Mexico, $2.00 per year; foreign countries (in postal union), $4.00 per year, payable invariably in advance.
Advertising rates on application. Copy for changes in advertisements must be in hand the Thursday previous to publication to insure insertion.

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THREE COMPANIES COMBINED

AMALGAMATION OF THE WINTON COMPANY WITH THE NATIONAL AND THE MANHATTAN OIL MOTOR COMPANIES—CONTROL FORTY-NINE GASOLENE AND KEROSENE MOTOR PATENTS AND TWO MANUFACTURING PLANTS.

On October 10 the Continental Automobile Company was incorporated under the laws of New Jersey, with a capital of $8,000,000, of which 35,000 shares, representing $3,500,000, is issued as 6 per cent cumulative dividend preferred stock, and 45,000 shares, or $4,500,000, is issued as ordinary stock.

As a foundation for this capitalization the Continental Automobile Company has acquired all of the property, patents, manufactured stock, rights, good will, business contracts, and the capital stock and bonded issues of the Winton Motor Carriage Co. of Cleveland, Ohio; the Manhattan Oil Motor Co. of Jersey City, N. J., and the National Motor Carriage Co. of New York City, delivered free of all liabilities.

This deal is the upshot of the negotiations which have been carried on for several months with a view to combining all the gasolene motor manufacturers who control valuable patents under one management.

A Question of Patent Values.

It has been generally understood that a close examination of patents by legal and technical experts was the test stone by which the fitness of the various concerns for admission to the projected combination was tried and that several companies that were willing to combine were found wanting on the point of the legal value of their patents. On the other hand, other companies which were approached by the promoters could not be induced to see the value of combining with the owners of patents which, though legally strong, were in their opinion mechanically weak. Under these circumstances the final success of the scheme was doubted and it is now a matter for astonishment not that the combination includes only one motor vehicle manufactory—the Winton—that has operated on a commercial scale, one motor factory—the Manhattan—which has had little connection with automobile vehicles so far, and the National company that holds United States and Canada rights in the first Duryea patents, but that the combination was at all materialized.

Based on Commercial Success.

In its prospectus the Continental company states that the combination confers upon it the ownership of forty-nine domestic and foreign patents covering the use of gasolene, kerosene, and petroleum as applied to motors or engines for automobile, marine and stationary power uses, being the inventions of Alexander Winton, Cleveland, Ohio; Emil Capitaine, Frankfort, Germany; Charles E. Duryea, Peoria, Ill.; James Frank Duryea, Springfield, Mass. "Amalgamated under one ownership, these patents represent the distinctive success in this class of automobiles," it is stated, and in this phrase may be found the keynote to the commercial argument upon which the combination has been perfected. It rests upon the facilities for immediate manufacture of salable vehicles which are at hand in the plants of the Cleveland and the Jersey City companies, and gains additional strength by the early Duryea patents under which a very compact motor may be produced.

Facilities of the Combination.

The prospectus-writer says on this point:

This company has acquired two complete manufacturing establishments—one at Jersey City, N. J., the other at Cleveland, O.—giving it a present capacity of 500 automobiles and 1,800 marine and stationary motors per year, these plants being thoroughly equipped with modern machinery, all practically new and both susceptible of such enlargements or extensions as will double the output of finished machines.

The company acquires a business in booked orders which will fully employ the present capacity of its two plants for twelve months and is daily proffered orders in increasing numbers.

The physical assets of the company, together with its patents, have a value in excess of its preferred capital, and its earning power from orders in hand exceeds the 6 per cent upon its issue of preferred and 9 per cent upon its issue of common stock.

The company offers the 35,000 shares of its preferred stock for subscription at par, limiting the time for subscription to two days, from Monday, October 16, to Wednesday, October 18.

The directors are: Hon. Anthony Higgins, ex-United States senator, Wilmington, Del.; William H. Bulkeley, director United States National Bank, Hartford, Conn.; William H. Lake, capitalist, New York; W. H. Nixon, Martin & W. H. Nixon Paper Co., Philadelphia, Pa.; Charles T. Welles, president City Bank of Hartford, Hartford, Conn.; George Brown, secretary Winton Motor Carriage Co., Cleveland, Ohio; A. M. Jordan, president Atlantic City Sewerage Co., Atlantic City, N. J.; W. C. Hendrickson, Belle Mead Stock Farms, Belle Mead, N. J.

The engineers of the company are to be Alexander Winton and Viggo V. Torbensen, the latter being now the engineer of the Manhattan Oil Motor Company, making the Capitaine kerosene motor, which was described in the September 19 issue of The Motor Age.

Beneficial Results Anticipated.

As a capitalistic combination which will tend to infuse life in the actual manufacture of gasolene and kerosene motor vehicles the new company seems to be entitled to an appreciative reception, not being so large in its scope as to exclude wholesome competition. If in course of time new constructions of motors and of vehicles should come to the front, independently of the 49 patents controlled by it, the works of the Continental company and of any other prime-motor vehicle company that may be organized on a strong financial basis at the present time, will undoubtedly retain their full value to stockholders through the facilities controlled there for the manufacture of motor vehicles of any construction in which a prime-motor is employed, and the directors will, through these facilities for manufacture, usually be enabled to secure the rights to manufacture under new patents, if such change be found desirable.

AUTOCAR COMPANY OF PITTSBURG

Among the new concerns which enter upon the manufacture of gasolene motor vehicles under favorable auspices financially and mechanically, the Autocar Company of Pittsburg takes prominent rank.

It succeeds to the stock and book-orders of the Pittsburg Motor Vehicle Company, and is organized to manufacture on a large scale the three types of vehicles which through two years of costly and systematic experimental work have been brought beyond the experimental stage by the latter.

The writer understood on the occasion of a recent visit to the parent plant, that its shop would continue to be used as a station for tests of contemplated improvements and new types of vehicles, while the plant of the Autocar Company will be solely devoted to manufacture of vehicles of proved merit on the lines followed wherever economical mass production by automatic machinery is the object.

A somewhat extensive ride over the hills of Pittsburg in one of the company's phaetons, on the same occasion, went far to prove that this vehicle is readily controlled and useful for the purposes for which it is intended besides being of attractive style and finish. It is operated with a single lever for forward speeds, also actuating a band brake when desired, and a steering lever. Vibration of the vehicle is not noticeable at the ordinary driving speeds. No incidents of any kind occurred during the trip; all ordinary grades were negotiated without sensible decrease of speed and no imperfections

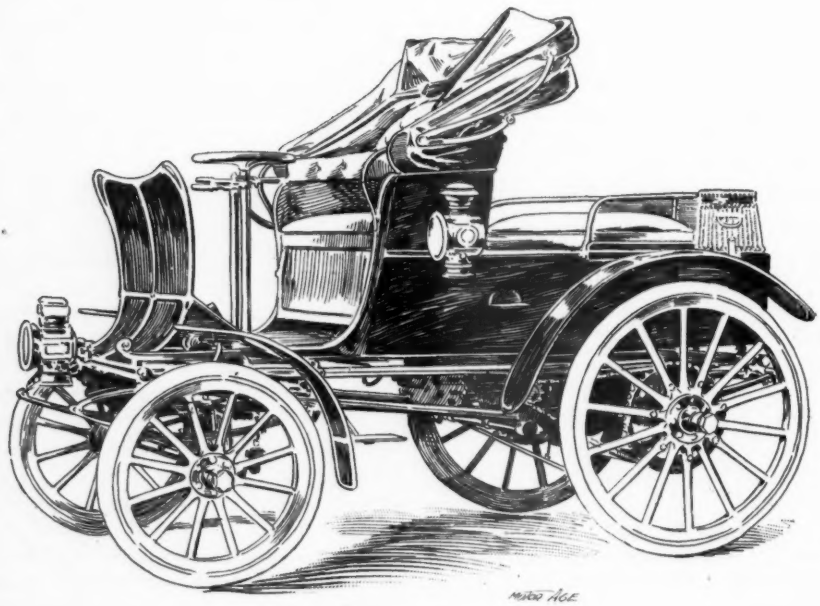
affecting the reliability of the motor cropped out except that starting required a higher muscular effort for turning the crank than desirable, the compression of the charge being evidently high with the ignition timed as it was on that particular occasion. An unexplained peculiarity of the functions of the motor was observed on down-grades, the motor apparently operating at the same speed whether assisted in its work by gravity or not. With the controlling lever set for a gear speed of five miles per hour, this speed was not increased when going down hill.

The Autocar company has purchased a 3 1-2 acre tract of land at Swissdale, near Homestead, where a large factory will be erected. The contract for this building has been awarded to Messrs. Lytle Bros. of Wilkinsburg, Pa. The building will be 200x50 feet; a blacksmith shop, 30x50 feet and two stories high, and a loading shop 60x15 feet and two stories high. It is expected to be completed by March 1, 1900, and will have manufacturing facilities for 3 to 400 workmen, and a capacity of four to eight vehicles per day.

Three styles will be made: a runabout weighing about 500 lbs., a park trap and a delivery wagon.

The men through whose work these patterns have been perfected are Louis S. Clarke and William Morgan, young men controlling ample means to back their mechanical resources and assiduity. The charter members are Charles J. Clarke, J. Denison Lyon and F. K. Fitler, all of Pittsburg and well known in the financial world.

A "VIBRATIONLESS" CARRIAGE



THE "VIBRATIONLESS" GOBRON-BRILLIE.

The gasolene vehicle illustrated herewith and on the front cover of this issue is chiefly remarkable for being almost entirely free from the vibration which forms one of the most objectionable features in other vehicles of the same general type. It owes this valuable trait to the design of the motor which is described as "of the

two-cylinder, four piston and four crank type." Engine tremor is said to be barely perceptible when the motor is running at top speed and the vehicle standing, and absolutely imperceptible when the vehicle is in motion. The construction is French and is known as the Gobron Brillie.

OPINIONS OF AUTOMOBILE OWNERS

OWNERS OF MOTOR VEHICLES IN SYRACUSE EXPRESS THEIR PREFERENCES AND CRITICISMS. —ARE GENERALLY PLEASED WITH THEIR EXPERIENCES.

At present there are some eight or ten automobiles owned by Syracusans, says the Post-Standard of that city. C. Arthur Benjamin, T. D. Wilkin, F. C. Brower, Louis Will, Henry L. Trebert and John W. Cronin each own automobiles, which they are experimenting upon and have used to some extent. Severin Dorion, W. J. Frederick and C. C. Bradley have placed orders for horseless carriages.

Mr. Benjamin is one of the most enthusiastic of Syracusans over automobiles. He believes they will become popular all over the country, although the present types are faulty, but is of the opinion that there will have to be two types of carriages to satisfy the demand, one for city use and one for country trips.

Likes Steam for the Present.

Mr. Trebert believes that steam is the best motive power for a horseless carriage and owns a Stanley wagon. In speaking of the advantages of steam Mr. Trebert said that it is not only quieter than the gasolene motors, but is more powerful and lighter. The engine, he says, will run almost without noise and there is no apparent steam only when the day is cold or damp, and then only a small spray is visible. The greatest advantage, he says, is in the fact that the speed can be regulated anywhere from one mile to forty miles an hour, while, with the gasolene motor only certain speeds can be used under all conditions. This is due to the fact that the gasolene engine runs at the same speed, the change in the speed of the automobile being effected by a system of gearing or belts similar to the shifting of belts from large to small wheels. In most gasolene automobiles there are three different speeds attainable, but some have five. This makes a large amount of machinery and fills up the wagon box.

(This criticism of gasolene vehicles applies with much more force to the French patterns than to those made here. American constructors have from the beginning aimed to regulate speed through the motor and to reduce the speed gears to one or two, obtaining all intermediate speeds by increase or diminution of the gas charge. In many of the latest French vehicles intermediate speeds are obtained by varying the tensión of driving belt or other friction devices, and it is to be noted that the very latest French construction tends in the same direction as our own, viz., toward speed regulation by the motor. This tendency is universal, and it is only because the necessity of striking out in that direction was appreciated in United States from the beginning that American constructors today may be considered as far, if not farther, advanced than their competitors in other countries where automobile experience is of much older date. When the speed changes in gasolene vehicles are under discussion it should also be remembered that the momentum of a vehicle in motion always serves to efface all abruptness in the transition from a higher speed to a lower.—Ed.)

Although Mr. Trebert believes the steam engine is the best means of propelling an automobile as constructed at present, he is now at work on a new gasolene motor which he hopes to perfect and in which he believes the disadvantages of its use will be overcome.

No Use for Cheap Vehicles.

Frederick C. Brower, who owns an automobile propelled by a gasolene engine, discussed the cost of horseless carriages and their serviceableness. He

does not believe that the cost of automobiles will be greatly reduced for a long time. The vehicle must be built more carefully and stronger than a road wagon to be drawn by a horse, and they cannot be built in any quantity at rates which the popular mind consider as "cheap." He believes that one of the fruitful sources of mishaps in the use of automobiles is that the bolts and nuts work loose by the constant jar and vibration. In some machines the manufacturers have holes drilled through the nuts and bolts and a key inserted which prevents any loosening of the nuts.

The injudicious use of automobiles is doubtless the cause of many of the accidents. They must be kept under control and steered free from sinkholes and gutters. It is not a wise thing to try to run down a stone fence or to take overland trips through woods and across creeks.

Thinks Cost is Underrated.

Mr. Brower does not place too much confidence in what manufacturers say about the cost of running automobiles. As to electric vehicles, he believes that instead of it costing 50 cents to recharge a storage battery which will run a carriage fifty miles, it will cost nearer $5 if the electricity is paid for at meter rates. He is not wholly confident, either, that the steam and gasolene engines can be operated as cheaply as the agents claim.

In regard to the convenience of the different kinds of power, Mr. Brower thinks that gasolene is the most practicable for all uses. Steam vehicles, he believes, will remain the cheapest on the market, but will be the easier to get out of repair. They may be the best long distance machines. He has but little affection for the electric carriage.

He has partially answered the objection raised as to the regulation of speed of the gasolene engine carriage by a simple device which he has placed on his own wagon. When the engine is geared to the thirty-five mile an hour speed he can slow it down to a small rate of speed and maintain it by the manipulation of a small lever which works like the throttle of a steam engine. He gives his gasolene engine less air, which reduces the power and makes the wheels run slower. With the high power shut down to a low speed the carriage cannot climb hills. So for hill climbing the low speed must be used.

Device Against Meddlers.

Another device which Mr. Brower has attached to his carriage is one by which he can cut off the electric current which ignites the gasolene. He puts this on for the reason that when he left it in the street people constantly interfered with the levers and started the engine. By the insertion of a key he effectively ties the horse of the horseless carriage.

T. D. Wilkin is enthusiastic over the automobile and believes that it will be the great carriage for the well-to-do class. However, he says that his experience has shown him that the machines are by no means perfect yet, but he thinks they will be soon. His carriage is propelled by a gasolene engine. The speed is regulated by gearing, and not belts.

Louis Will's carriage is also fitted with a gasolene engine. He has taken a number of long rides and finds much pleasure in spite of the little inconveniences.

TROUBLES WITH MOTOR OMNIBUSES

The numerous companies that were founded a year or two ago to organize services of steam omnibuses throughout the country have not met with the success that seemed to be warranted by the enterprise of the promoters, writes a French correspondent to The Autocar. Several lines have been inaugurated, and it was hoped that these would be the beginning of a vast system of automobile transport, but, unfortunately, nothing more has been heard of them, and it is to be feared that most of the undertakings have succumbed to the fate which has overtaken the Saint Germain service.

About a twelve-month ago the com-

mercial bodies of Saint Germain warmly supported a project presented by the Campagnie Nationale d'Automobiles for running a number of De Dion steam omnibuses between Maisons-La¼tte, Saint Germain, and Ecquevilly in place of the antiquated horse-drawn vehicles which made communication between the different towns very long and tedious. Though the traffic was not large, it was supposed that if automobiles were placed at the disposal of the public they would avail themselves of the cars to such an extent as to make the venture a profitable one. In the meantime the company could not afford to carry on the service without assistance from the Conseil General of the department, and this body agreed to subsidize the undertaking for the first year. Since then the cars have been running regularly, but they appear to have received very lukewarm support from the public, and to have met with a good deal of opposition from the local government boards on the ground that the heavy cars deteriorate the roads. When, therefore, at the end of the twelve-month the company applied for a renewal of the subsidy the Conseil General refused to grant it, with the result that last week the Compagnie Nationale d'Automobiles withdrew its cars, and announced that it intended taking them to some other part of the country.

The chief cause of this failure is undoubtedly the opposition of the road surveyors, who urge that the heavy vehicles, with their small and narrow-tired wheels, cut up the surface of the road when it is at all soft, and necessitate a great expenditure upon repairs. If these public services are to succeed the omnibuses must be designed upon entirely different lines, so as to give them a less cumbrous appearance, and the weight must be distributed over broader tires, which will save the roads from excessive wear and tear in wet seasons.

PECULIARITES OF MOTOR DRIVING

EXPERIENCE IN BOSTON INDICATES SENSITIVENESS OF REAR DRIVEN VEHICLES TO ROUGHNESS IN ROADS.—THE "AUTOMOBILE ARM" DUE TO OVERSENSITIVE AND RETROACTIVE STEERING.

The men at the repairs division of the public buildings department in Boston are finding out much about the good and bad points of automobiles since they began using their Stanley steam carriage for the office errands about town, says the Boston Transcript, and as their carriage is a fair average of the kind of automobile that is ordinarily used for light business and pleasure riding, their experience may be of some interest to others who expect to adopt the horseless vehicle some day.

Small Depressions Strongly Felt.

One of the first points learned was that while the carriage could be speeded at a high rate without trouble when on a smooth stretch of macadam or asphalt, the speed had to be checked before taking any slight depression in the road-surface, or even in going over cross-walks that were not quite flush with the surface. Otherwise the carriage received a tremendous jolt and the body, perhaps, pounded down on the frame of the running-gear. It might seem as if the jolting of this sort would be no more noticeable in an automobile than in a light, horse-drawn carriage. But it is. The greater speed of the automobile has something to do with it, but the difference between the pulling of a horse on a carriage and the self-propulsion of the automobile seems to be a reason, also.

That this supersensitiveness to unevenness in the road is a point of difference between the automobile and a horse-drawn carriage, rather than between one automobile and another automobile, seems to be shown by the fact that the city's carriage is one of the lightest types of self-propelling carriages, weighing

only 550 pounds, while the same tendency to jolt at even a slight unevenness is shown by the heaviest of the big electric-delivery wagons now in use in this city. The city's carriage weighs about nine hundred pounds with two men in it, while the big delivery wagon referred to, when ready for its daily route, tips the scales at almost three tons.

Large Tires Required.

Another lesson from the city's experience seems to be that, for running about here, there and everywhere over city streets, where uneven pavements over car tracks make the surface a severe test, it is no use trying to get along with pneumatic tires of less than 2½ or 3 inches diameter. Lighter tires than that cannot stand the pounding they have to take. And for easy riding, users of the city's carriage say that wheels of large diameter would make the carriage ride more smoothly than is possible with the twenty-eight-inch wheels now provided for this type of vehicle. The manufacturers, however, believe that heavier tires and stiffer springs under the body of the carriage will be an effectual remedy for much of this jolting.

The "Automobile Arm."

An extremely unpleasant feature of motor-carriage driving, noticeable with the city's carriage in common with many other types, is the strain on the driver's hand and arm from holding the steering lever. Perhaps this strain would be of little account if it were not for the fact that in riding over any surface but the very smoothest the handle of this lever is kept jiggering as if it were afflicted with the worst type of St. Vitus's dance. This makes it necessary for the driver to hold on tighter than he should have to do, and a tight grip on that jiggering handle for several hours at a stretch is enough to make the hand and arm numb for some time. If the carriage happens to be of a type in which it is always one hand that holds the steering lever, while the other is always on the controller, there is practically no chance to rest while the carriage is in motion. Probably it will not be long before some clever Yankee brain hits on a simple device that will overcome this disagreeable shaking and be applicable to the levers of all types of automobiles, but just at present more or less shaking seems to be unavoidable.

[Several devices for this purpose are already in use.—Ed.]

Control Depends on Driver.

So far as the control is concerned, it seems to be already a question of the ability of the operator and not the machine. An automobile seems to be able to do about anything that a horse-drawn vehicle can do if its operator can but think quickly enough to make the proper motions. There are not many to be made, but the whole business of driving is different from driving a horse. It requires the operator to be on the alert every moment. A horse, in a way, looks out for himself on favorable stretches of road, even in the matter of meeting or passing other vehicles. The automobile doesn't. If its driver makes a wrong motion, the machine will go wrong with just the same blithe swiftness as when it goes right. That is why it is worse for the driver of an automobile to get "rattled" than for the driver of a horse. Only the other day one of the employes of the repair division, while trying his hand at running the automobile, in the effort to avoid a young woman on a bicycle—often a difficult task for an experienced driver—found himself in imminent danger of running down a lady who was crossing the street. His first thought was to shut off the power, but in the excitement of the moment he turned the lever with great suddenness the wrong way, and the city's automobile gave a most undignified leap forward, and was only saved from striking the lady by being turned into the curbstone. It came out of the encounter with no worse hurt than the bending of a lever. But that shows that it is necessary to have not only the cool head but the well-trained hand in order to manage even the simplest of automobiles.

CHICAGO'S HANSOM CABS

The Illinois Vehicle & Transportation Company has at present about 30 vehicles for hire in Chicago, and during the first two weeks of the company's operations the income from each hansom and brougham averaged from 30 to 40 per cent higher than the corresponding receipts from the cab service in New York.

A CHICAGO ELECTRIC HANSOM CAB.

The illustration shows one of the company's hansom cabs. The hansoms and broughams are all steered by means of the rear wheels, the motors and gearing being mounted on the front axles. The stanhopes, runabouts and smaller vehicles are guided by means of the front wheels and have the motor mounted on the rear axle. Single "torpedo" motors of two horse power rated capacity are used, and are differentially geared to the wheels. On the larger vehicles two of these motors are mounted together. Although only rated at two horse power,

the motors are capable of being overloaded for short periods by nearly 100 per cent. In the larger vehicles the batteries consist of 48 cells with a 75 ampere-hour capacity, while the smaller cabs and private vehicles carry batteries of 44 cells each. The hansom cabs weigh from 3,700 to 4,000 pounds each, while broughams weigh about 200 pounds less. Each carriage is richly upholstered and is fitted with incandescent lights.

EFFECTS OF TIRE TROUBLES

In the latest heavy electric carriages, such as those manufactured for cab service in Chicago and Riker's latest style of demi-coach, it is noticed that the mileage claimed for each charge of the batteries is only 20 to 25 miles, with additional reservations in case of bad roads or high wind.

The tendency is to economize on weight of batteries while not reducing their durability. Consequently the travel radius is reduced.

By low degrees the electric carriage finds its proper place which is largely determined by the difficulty of the tire question. For the very heavy vehicles nothing but pneumatic tires seems available and these only at enormous cost. For the medium heavy vehicles solid rubber tires are forging to the front, being more reliable and economical up to a certain limit of load, and for the lightest form of electric vehicles—the runabout—the pneumatic tire is again preferred, giving the greatest comfort with reliability much increased by the lighter load.

UNITED STATES ELECTRIC WAGONS

In the electric vehicles to be manufactured by the United States Automobile Company, of Providence, R. I., there will, it is stated, be no compensating gear—the necessity for it being obviated by the nature of other points in the construction. The motors will be of a special design and the steering mechanism will not be retroactive; that is, while the operator may steer the wheels with the steering lever the lever stays where it is put and cannot be caused by vibrate or "jigger" from inequalities in the road acting upon the wheels. Frank Mossberg is the president of the concern.

PROGRESS IN FRENCH CONSTRUCTION

Whenever an opportunity is offered to study the entire mechanism of one of the latest French gasolene motor vehicles it means for the constructor in this country a chance to compare notes and pass new judgment on points in his own construction. Whether he arrives at the conclusion that his own is superior or that it needs remodeling, the result of the comparison must be beneficial, if he always keeps it fixedly in mind that the American public will not be satisfied with any gasolene motor vehicle that is not markedly superior to the best French gasolene motor vehicles, as these have been known in practice until a very recent date. The very latest French construction, on the other hand, while not yet tested extensively in practice, aims at the same ideal of simple and perfect motor control for which our best constructors are striving and may be studied with great profit. In this respect the Marmonier motor described in this issue furnishes a striking example.

RUBBER PULVERIZED BY STRAINS

Contrary to the commonly accepted belief the greatest cause for trouble with the pneumatic tire on heavy vehicles is not puncture, which amounts to only about seven per cent of the troubles, but results from the internal wear of the fibers of the tire due to the weight. Some tires after being used for a while, upon being examined, are found to have the fibers of the material reduced to a fine powder.—Western Electrician.

CHARGING STATION FOR $12

Dr. Hutchinson, of Brooklyn, uses a Riker electric Stanhope in his practice and is highly satisfied with the results. He has established a charging station on his premises which cost him $12 to get up.

PHILADELPHIA PARK OPENED

THE PARK COMMISSION IN PHILADELPHIA INSTRUCTED TO OPEN DRIVEWAYS OF FAIRMOUNT PARK FOR AUTOMOBILES SUBJECT TO REASONABLE REGULATIONS.

Philadelphia, Oct. 9.—After mature deliberation that extremely conservative body, the Fairmount Park Commission, is beginning to see the light—at this week's meeting it will actually vote to recommend the opening to the use of automobiles certain of the less frequented park roads! To be sure, the automobiles will be suffered to enter the sacred precincts only on probation—if it be demonstrated that they destroy the roads, blight the foliage, juggernaut the children or scare the equines, out they'll go again! They'll be allowed to experiment on the edges, as it were, and if none of the dreadful things above enumerated come to pass, there is a reasonable assurance that in time the motor vehicles will be allowed to roam at will through any and all portions of the park, subject only to the restrictions governing the use of horse-propelled vehicles therein.

Yielded to Fair Proposition.

It all came about through the action of the Commission's Committee on Superintendence and Police. Chairman A. Loudon Snowden drafted the initial resolutions, and after the adoption of various amendments thereto, they went through with a rush. Here are the amended resolutions:

Resolved, That until otherwise ordered, automobiles for the conveyance of passengers shall be permitted to use the following drives in Fairmount park, to-wit:

Thirty-fourth street, Belmont avenue and Northwest approach leading from City avenue bridge to Ridge avenue; also Dauphin street entrance, turn to the right or north over the trolley bridge, up Greenland drive to Chamounix drive, to Belmont avenue, and return over the same route.

Subject to the following regulations established for the protection of the public:

First—Conductors in charge of automobiles must be skilled in the management of such vehicles.

Second—When horses become restive, or frightened, by the approach of an automobile, the conductor of the same shall bring it to a full stop.

Third—Conductors of automobiles must not sound gongs or bells, except at the intersection of drives.

Fourth—Conductors of automobiles must conform to the rules governing other vehicles in the park, including the restrictions of speed to seven miles an hour.

Relics on Love of Life

In advocating the passage of the resolutions Colonel Snowden said that the proposed concession was in the nature of an experiment, and if it was demonstrated that no evil resulted therefrom the privileges could be gradually extended until even the most frequented drives would be opened to the new vehicles. This, from a confirmed horseman, was a distinct victory for the "dingbats." When Member Huey read a dreadful clipping from the Scientific American in which it was stated that in Paris eight people had been killed outright and upwards of fifty injured by automobiles, mainly through the incompetency of their operators, some one suggested that every operator be put through a course of sprouts in order to demonstrate his efficiency, but Member Sellers promptly came to the rescue by declaring:

We have a right to assume that the love of life and the desire to avoid injury will be a restraint upon operators of automobiles just as it is to drivers and wheelmen. We require no certificate of competency from drivers or bicyclists, and I think it would be unwise to demand certificates at the present time. If, after the resolution has been in force for some time, it is found that the operators of automobiles ought to be further restricted, then we can and ought to act.

License Fee Proposed.

Because of the absence of a quorum at the meeting of council's sub-committee on law, last Thursday, no action was taken on the impending ordinance regulating the operation of automobiles in the city

limits by imposing an annual license fee of $10 on each vehicle. City Solicitor Kinsey, however, gave it as his opinion that the proposed ordinance is inoperative because of being faultily drawn, and he suggested that he be instructed to frame another ordinance covering the operation of every form of mechanically-propelled vehicles now in existence. When the ordinance comes up for final action it is intimated that it will be objected to on the ground that the fee is excessive as compared with that collected from owners of horse-propelled vehicles.

COMPARISON OF EXPENDITURES

A contributor to an English journal sums up the question of horse cost versus motor vehicle cost as follows, the money being figured in our coin:

I live five miles from a town, in a village of three hundred and fifty people. The only public means of communication with the world is by carrier's cart at the rate of five miles in two and a half hours. The district is hilly, roads flint, steam rolled; good except in prolonged dry weather. I average thirty-five miles per week, taking the year around.

I gave $115 for my horse, and $135 for a four-wheel dogcart, taking four people and luggage. So that the horse figures out thus:

Interest on $250 at 4½ per cent	$ 11.25
License for four-wheel	5.25
Keep of horse at $2.50 per week	130.00
Shoeing	12.50
Total	$159.00

Now for the motor. Less than a week ago a Leeds firm advertised a 5-horse-power dogcart at $850. This I take, since it would convey the same load as my present carriage. Annual expenses would figure out thus:

Interest on $850 at 4½ per cent	$38.25
Tax	21.00
Petrol at $.75 for thirty-five miles; lubrication, $.25	52.00
Total	$111.25
Saving on motor	$47.75

I have not allowed for the fact that I should be away probably five weeks in the year, during which the horse must eat, but the car costs nothing.

As to cost of tires, if we insist on rubber for a motor car, should we not also do the same for the horse-drawn carriage? Rubber is not, as you say, an absolute necessity. Even if it be, "Ideal" tires cost $50 on a new four-wheel, and can be renewed for about $30, I am told, and would for my work last eighteen months at least.

So much for theory. Now, practically, horses have cost me for the past two years as follows: I bought a cob for $60; harness, $15; two-wheel trap, $50. After six weeks he fell going down hill, and cut his knees badly, and much damaged the trap. He was in stable seven weeks, during which time I paid a neighbor's coachman $5 for doctoring him. The repairs to the trap cost $22.50. Hire of another horse during the seven weeks, $15. We went on for thirteen months without accident. Then he strained his shoulder and went lame, and I sold him for $25 and bought my present turnout. The actual expenses for two years of horse driving therefore come to something of this sort:

Original purchase	$125.00
Doctoring horse	5.00
Repairs to trap	22.50
Hire for seven weeks	15.00
Purchase of present turnout	250.00
Cost of keep two years	260.00
Cost of shoeing two years	25.00
License two years	10.50
Total	$713.00
Deduct for sale of first horse	25.00
Total	$688.00

I am not exceptionally unfortunate, for one friend has had to shoot a horse worth $300 in consequence of a fall, and has a second in hospital now for the same cause. Both these occurred since January. Another friend gave a long price for a horse, and in a week he fell, and has been unusable since, about seven or eight weeks. I think I may therefore fairly set the horse accidents against the possible repairs to car, and still have a balance in favor of the motor.

I do not enter into cost of man, as I must have one for garden, etc. In the case of motor, being a fair amateur mechanic and lathe man, I could do my own driving and ordinary repairs.

Again, my usual load is self and wife and parcels. A quadricycle at $500 would do this, and cost less than one cent per mile. If I could afford the initial cost I would have a motor tomorrow.

THE HORSE AND ITS FATE

So long as men's love for fine horses abides, there is little fear that the trot-

ters, the runners, the roadsters, the drafters, or even the pony breeds will be swept into the obsolescence of the dodo by any sort of machinery, says the St. Louis Republic, overlooking that "men's love for fine horses" is likely to vanish mysteriously and suddenly as soon as the owners of these fine horses find that they have to take the dust from any motor vehicle whose driver chooses to pass them on the road.

HORSESHOERS' SENSIBLE ACTION

The National Master Horseshoers' Protective Association met in Pittsburg October 10 and discussed, among other things, the inroads of the automobile on horse traction. Instead of railing against the automobile and its faults and passing idle resolutions to stop the tide of events the Horseshoers' Association took the sensible course of deciding to do its share toward removing some of the objections to horses. It was decided to inaugurate a general movement to compel examination and licensing of horseshoers. Animals, it was argued, were frequently crippled and rendered useless by incompetent work. Seven states have the license law, and it is beneficial to craft and beast.

Thus one of the first effects of automobile competition with the horse seems likely to take the form of improvement in the condition of the latter.

THE DAVISES STILL TRAVELING

Mr. and Mrs. John D. Davis have reached Chicago with their ill-fated motor carriage. Little of the original motor and running gear mechanism with which the couple started from New York under the auspices of the New York Herald was left, the principal remainder, it is said, being the rear axle; and that broke at the crossing of 71st street and Bond avenue in Chicago. When a new axle shall have been fitted it is the intention to proceed on the way to San Francisco.

MEETING OF AUTOMOBILE CLUB

A meeting of the Automobile Club of America has been called by Acting Secretary Homer W. Hedge for Monday evening, October 16, at the Waldorf-Astoria hotel, New York, to receive the report of the acting executive committee, the constitution and by-laws and discuss such matters as may come before it.

CHAUFFEURS AND CHAUFFARDS

The "Chauffeur" who "scorches" but fails to show skill is called a "chauffard;" pronounce shof-fur and shof-far, the "fur" somewhat broader than "fur" in English; "far" as "far" in English; accent equally divided between the two syllables in either case.

When one wants all the comforts of life, why, one should stay at home, wisely remarked an automobile manufacturer whose customers were too exacting.

An international congress of automobilists in Paris, to take place during the exposition next year, is projected.

WHERE THEORY OR PROMISE PREVAILS

GASOLENE MOTOR UNDER THROTTLE

MARIUS MARNONIER'S CONSTRUCTION OF HYDRO-CARBON MOTOR BY WHICH CONTROL OF POWER AND SPEED IS EFFECTED ENTIRELY THROUGH REGULATION OF THE CHARGE OF VAPOR OR LIQUID SUBJECT TO MANIPULATION OF A SINGLE LEVER.—COMPRESSION CONSTANT AND IGNITION AUTOMATICALLY TIMED.

The many-levered French gasolene motor vehicle will soon belong to the past. In practically all the new constructions which have lately been described in French motor vehicle journals speed is controlled mostly by varying the power of the motor through regulation of the vapor charge, and the former multiplicity of speed gears is dispensed with. One of these new constructions is invented by Marius Marmonier and is described in La Locomotion Automobile.

Marmonier tries to obtain as large a variation of power as possible by also varying the capacity of the combustion chamber, believing apparently that it is necessary to maintain the compression of the charge invariable. The quantity of burnt gases remaining in the cylinder after each exhaust stroke is reduced or increased in direct proportion to the vol-

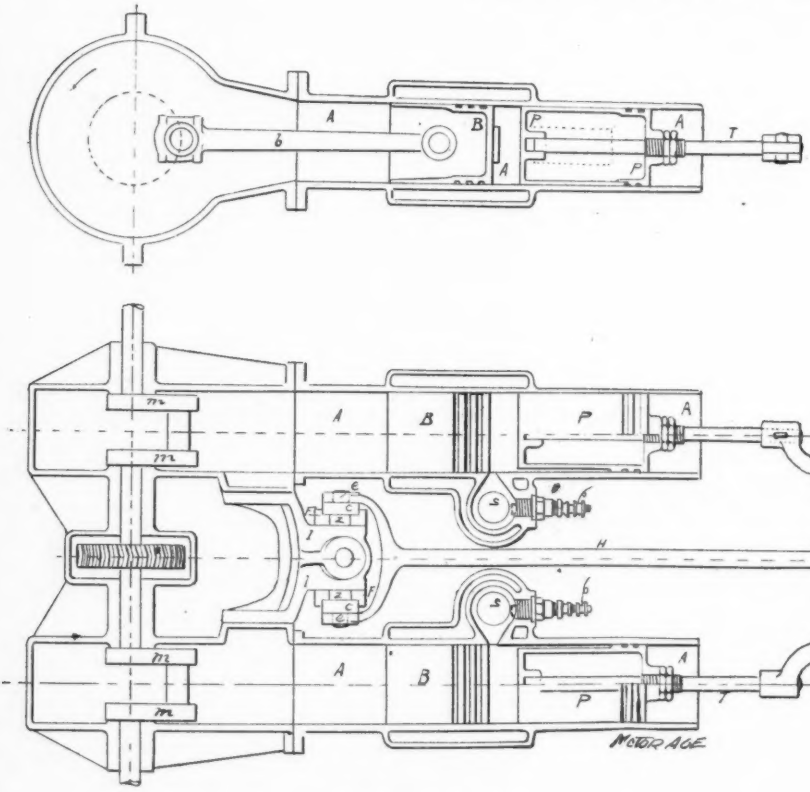


Fig. 1.—Vertical Section of Cylinder.
Fig. 2.—Horizontal Section, Partly Plan, of Cylinders.

ume of fresh vapor admitted, so that at the moment of the subsequent explosion, the proportion of fresh and burnt gases, as well as the compression, remains the same over the entire range of variable admissions.

The Mechanical Elements.

The mechanism is shown in Figs. 1, 2 and 3. Cylinders A are open at both ends. The pistons B are connected by the shanks b and the cranks m to the motor shaft. Counter-pistons P are connected by the rods T and the rigid yoke G. The yoke I carries the fixed pivots Z around which the slide F oscillates and also the standard L which is connected with the screw M by means of a Cardan joint concentric with the axis of the fixed pivots Z. The rod H is forked at one end and attached to the projected ends of bolt C, following the displacements of the latter along the slide; at the other end it is jointed to the yoke G. The rods K, above mentioned, are jointed at their lower extremity to the lug g which is integral with slide F. R is the automatic admission valve and S the exhaust valve which

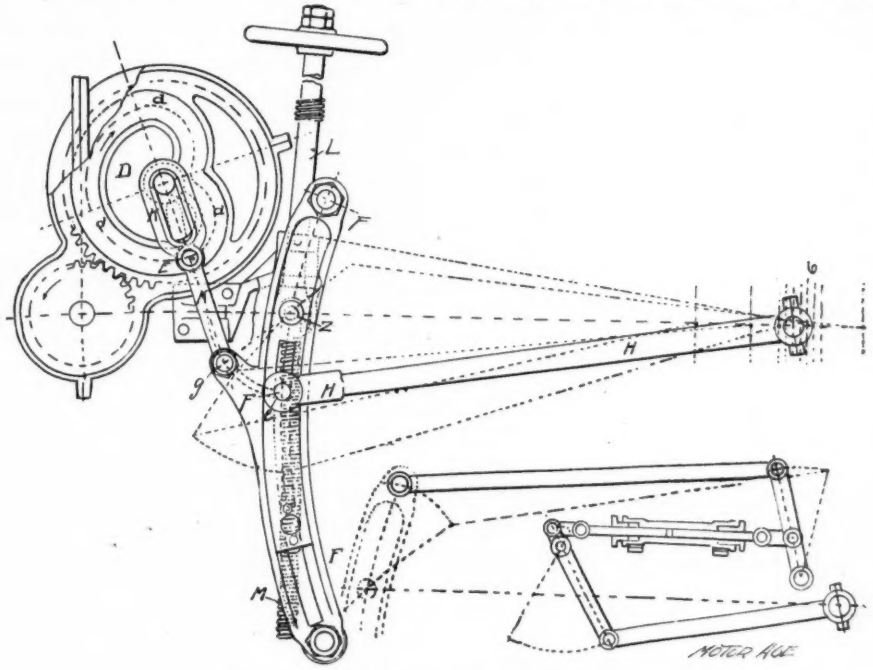


Fig. 3.—Mechanism Controlling the Counter-Pistons.
Fig. 6.—Pump for Liquid Feed.

disk D, geared to half motor speed, carries on each of its faces a cam d which regulates the to-and-fro movements of roller studs E which through rods K control the slide F, imparting to it an oscillating movement during the admission and compression strokes. C is a bolt formed in two parts, which may be moved up and down in the slotted sides of the slide, being actuated by the adjusting-screw M. A nut N working upon the screw M engages the bolt C with two pins, so that the nut moves up or down with the bolt C when the screw M is rotated. The is controlled by the cam J on the half-speed shaft.

The Cycle of Operation.

The motor operates as follows, only one of the cylinders being considered as the operation on the other is the same:

Suction stroke: The cam d displaces studs E which cause slide F to oscillate from right to left. If bolt C is so placed that its axis is on a line with the pivots Z, rod H and the counter-piston P will remain unmoved. There will then be full admission of fresh gas equal in volume to

that displaced by the piston stroke. But if C occupies a position lower on the slide, rod H causes counter-piston P to move inward in the cylinder at the same time as piston B travels its suction stroke, and by this action the quantity of fresh gas admitted will be reduced. The lower C is placed on the slide the greater will the reduction be, and when C is at its lowest possible position the stroke of the counter piston will equal that of piston B and no fresh gas will therefore be admitted. If C, on the other hand, is above pivots Z, the slide will oscillate in the other direction and the counter-piston will move outward, enlarging the space in

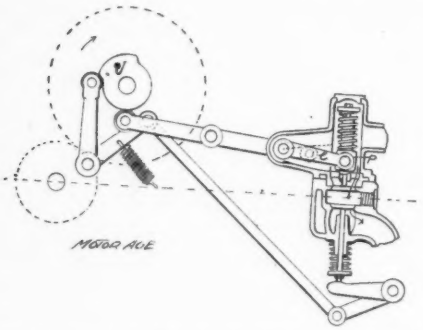


Fig. 4.—Automatic Adjustment of Valve Spring Tension.

the cylinder and adding its own suction stroke to that of piston B.

Compression stroke: The studs E continue to roll on cam d; the slide oscillates from left to right (if previously from right to left) and the counter-piston returns to its initial position.

Power stroke and exhaust stroke: The studs E roll on the concentric portion of cam d and slide F and counter-piston remain stationary. Piston B makes the power-stroke and expels the burnt gases.

Compression Remains Constant.

Besides the effect of the counter-piston movement upon the gas admission it is to be noted that the space between the pistons is reduced when C is low on the slide, and that therefore the volume of burnt gas remaining in the cylinder after the expulsion stroke is correspondingly reduced, and that the subsequent compression of the smaller gas charge admitted remains unchanged because it takes place in a correspondingly smaller space. In other words, the quality of the charge remains always the same, the slide being so shaped as to bring about this result even at the extreme positions of C, whether below or above the fixed pivots Z. At the lowest position, when there is no gas admission at all, the counter-piston abuts against piston B and follows it during the suction stroke.

By changing the form of the slide it is seen that the motor may be adapted to vary the compression according to the volume of the gas charge, if this should be considered desirable.

As Flexible as a Steam Engine.

Generally speaking, the slide performs the same functions as the throttle in steam engines and the mechanism described should therefore be well adapted for stationary motors used in the industries, the power being readily adjusted to the maximum work required in each case.

In the above explanations no cognizance is taken of the "dead spaces" exist-

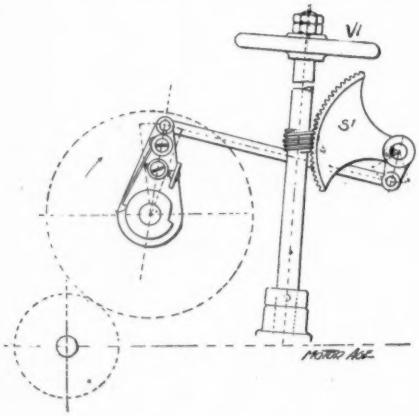


Fig. 5.—Au o ratic Timing of Ignition.

ing in all motors: the pipes for admission and exhaust leading to the corresponding valves or parts. These represent in the motor referred to one-twenty-fourth of the cylinder space and modify slightly the exactness of the explanations. But the inventor suggests that there is no real necessity for dead spaces as the valves might be placed in the head of the counter-piston.

When the motor is worked with very small charges it follows from the very

small volume of the gas exploded that the burnt gas after the piston has finished its power stroke may be under less than one atmospheric pressure, which condition would result in opening the admission valve and admitting a certain quantity of explosive mixture in the cylinder when not wanted, only to have it expelled at the next piston stroke as a pure loss and cause of unnecessary odor. Fig. 4 shows the arrangement made to obviate this undesirable result. During each period when the exploded gas is expanding the spring which holds the admission valve to its seat is stiffened so that the pressure on this valve will exceed that on the exhaust valve, thereby causing any suction that may take place to take effect through the latter. The cam J which controls the exhaust valve controls also during the power stroke the lever 1 which presses upon the collar p mounted upon the valve stem and compresses the spring.

Ignition Automatically Timed.

In Fig. 5 is shown a device for this motor, especially intended for its application to motor vehicles. Its object is to advance the time of ignition automatically in proportion as the vapor charge is increased, the exact design of the device having been determined by experiments showing what time of ignition is most suitable for any given vapor charge in order to obtain the highest power efficiency. When turning the control-wheel V, which regulates the vapor admission through the screw M the sector S is also turned on its pivot and it, in turn, controls the ignition device.

It will be noticed that the entire motor mechanism forms an organism which may be controlled in all its functions by a single mechanical element, the control-wheel V, fixed at the top of standard L. By manipulating it the driver regulates the power and speed of the motor as well as the fuel consumption, adapting these factors to the work desired. Nothing prevents, however, the control of the ignition to be severed from the rest of the organism, and this disposition might be preferred by very skillful drivers.

Pump for Liquid Feed.

In the foregoing the supposition has been that a carburettor supplied the explosive mixture in gaseous form to the cylinders. Fig. 6 shows a supplementary device for use if it is preferred to feed the hydro-carbon into the cylinder in liquid form. It consists in a pump which automatically reduces the liquid fuel supply in proportion as the air admission is reduced. This pump has two pistons, one with a fixed stroke and actuated by the slide F during the suction and compression strokes, and the other with variable stroke and connected to the counter-piston rod as shown in the illustration. The operation is entirely analogous to that of the cylinder piston and counter-piston and requires no further explanation.

IS IT CONTINUOUS COMBUSTION?

If no reservations are to be made for over-hopefulness or specially British desire to minimize the merits of the light American steam wagons for which the British public are becoming rather enthusiastic, the following statement in The Autocar of September 30 should be of intense and general importance as ushering in a new era for gasolene motor vehicles. Says Mr. Sturmey's organ:

Some months since we referred to a remarkable light oil motor of which we had been favored with a private view, possessing attributes which made it as much as possible like a steam engine in its working without the objection of a steam generator, and we promised further particulars at a subsequent date. As a matter of fact, we hoped to publish them in today's issue, but at the last moment find it will be desirable to withhold them for another week. We may say, however, that the new engine can be started up instantly like a steam engine by merely turning a tap, no application of a "winding-up" handle being required. The car is driven in precisely the same way that one would drive a steam car, save that there is no anxiety whatever about the water or fuel for the boiler. The car and the motor

are started simultaneously, and stopped simultaneously, but the resemblance to the steam engine does not cease here, as the nominal power of the motor can be greatly increased when necessary in the same way that one can turn on an extra full head of steam for a special effort up a hill or over a bad piece of road. The increase of power, too, can be made quite gradually. It is not a question of suddenly doubling the power of the motor, but it can be increased as slowly or speedily as the driver may desire, and this maximum power can be kept up for a long period, whereas with most steam engines the boiler can only be called upon to make a special effort for a comparatively short spurt. In another way this light oil motor bids fair to beat its great rival—the steam engine—and that is in the fact that there is no getting up steam in making the first start for the day, which is effected as quickly as a start after stopping when on the road.

From this description the inference would seem justifiable that a really practicable continuous combustion gas-motor is now existing in the flesh, as it were, and that hereafter all motors with water-cooling arrangements or radiator-ribs will be back numbers.

HERRING'S BICYCLE MOTOR

A. M. Herring, of St. Joseph, Mo., has in the past devoted much study and work to the production of light-weight toy engines with a view to air navigation, but has lately turned his attention to the automobile problem and has invented a gasolene motor for bicycles. His previous success in reducing the weight of steam engines to the lowest extreme yet reached and yet obtaining a fairly satisfactory factor of safety in regard to strength of the working parts, entitles his new work to careful consideration. He takes the same view as other advanced gasolene motor constructors that the most important improvement to be desired in gasolene motors is absolute control of the vapor charge, its quality as well as its quantity. In regard to his ideas and the results of his work he is quoted as follows:

After considerable study of the question, I came to the conclusion that the only apparatus in the shape of an automobile which would be able to traverse the great majority of American roads in their present condition must be something in the shape of a bicycle, as anything with a wider tread must necessarily travel at a slower speed than is practicable and safe with a bicycle, with which one may pick out narrow stretches of smooth way on either side of the road, or go along the paths in the local cities where the highways are roads in name only. But in order to make a practical motor bicycle it became necessary to produce an engine of extreme lightness, and yet capable of exerting much greater power than could be exerted by a single rider in order to avoid being stalled on poor stretches of roads or hills, such as the majority of riders walk up. This necessity, of course, lies in the fact that the motor-driven machine is heavier than the simple machine, and to be lasting must be an improvement upon it in all points.

It might be supposed that as gasolene engines were a known quantity and that as many thousands of them were in daily use, the adaptation became a simple matter. However, all gasolene engines as commercially manufactured are far too heavy for any class of motor vehicle on American roads, and of course are out of the question for a bicycle.

It became necessary for me to produce an engine which should be as simple as possible in outside mechanism, but yet absolutely reliable; which would be entirely free from vibration, self-contained, self-igniting, and when started once, requiring no further attention from the operator; and lastly, which instead of weighing 200 to 300 pounds per horse power, should not exceed 18 to 20 pounds, and yet furnish that amount of power steadily when desired, and in addition, be so incased that none of its working parts be accessible to dirt and grit.

These requirements virtually meant the production of an entirely new type of engine in so far as mechanical details, piston, speed and governing and igniting apparatus are concerned. It also meant the necessity of producing a new form of vapor generator and mixer, which would produce and automatically mix just the right quantity of gasolene and oil for each working stroke of load and speed.

After a great deal of thought and experimental work, I made the design of my machine. The entire apparatus, with half a week's supply of oil, and gasolene is enough to carry two people over average roads for

upwards of 120 miles at continuous speed far in excess of what the average rider can maintain.

The entire control of the engine is effected by pressure of the left foot, which rests on the speed governor. The engine itself weighs only about 20 pounds and develops considerably over one effective horsepower, as evidenced by the fact that it will carry the combined weight of the apparatus and myself, total 173 pounds, up the Langley avenue hill, a 9 to 10 per cent. grade, at a speed of upward of 16 miles an hour, or will carry two people through slightly sandy road at speed in excess of 20 miles an hour, besides all the while driving the electrical apparatus which furnishes it with its ignition.

The apparatus is always ready for use, the only thing necessary to do is to push the machine rapidly along a few paces and hop on as soon as the engine takes hold, which occurs after a run of from 10 to 15 feet. There is no further manipulation of the engine or any sort of valves or levers at all. It is, as you can see, nothing to do but steer and ride, with the speed under complete control of the foot.

THE ELECTRIC HEARSE

Editor The Motor Age:—Please send me The Motor Age, as I want to keep posted as to practical use of motor vehicles, especially by air or electricity.

* * * Are there any hearses in use yet? And what power is applied to them, gasolene, air or electricity, and where, if any, are they in use? Very respectfully,

JAMES FOWLER, Undertaker.

Alameda, Cal., Oct. 3.

There is apparently no reason why an electric hearse could not be made entirely successful. The weight of batteries would be less objectionable for the measured pace of a funeral procession than for almost any other practical use, and, as a rule, cemeteries are located within a distance that could easily be made upon one battery charge, both ways, especially with slow speed motors suitably geared so as to operate at their highest efficiency at a regular funeral gait. There must be many thousands of hearses needed in the United States and manufacture of electric hearses may yet become an important outlet for some of the capital engaged in making other styles of electric vehicles not so well adapted for their specific purposes as would be the electric hearse. About one year ago an undertaker in Chicago had prepared a design for an electric hearse, but it is not known that any manufacturer undertook to make it. Perhaps it was feared that the application of electricity to a lugubrious purpose would tend to lessen the popularity of electric pleasure carriages.

Nevertheless, an electric hearse is among the best possibilities for electric carriages.

PROPOSED MASSACHUSETTS OMNIBUSES

The name of a new corporation that proposes to run automobile street cars in Lowell, Mass., is the Union Automobile Car Company. It has been organized with a capital of $100,000 and the following are the officers: President, Daniel J. Donahue; vice-president and manager, John F. Murphy; secretary, James H. Carmichael; treasurer, Eben Stafford.

It is proposed to start with four lines, Pawtucketville, the Highlands, Belvidere and Centralville, running carriages to Lawrence by way of the Andover street extension and along the boulevard to the Vesper-Country club and the Tyngsboro bridge.

Carriages for the regular lines will be built to carry 20 passengers and will be run by electric motor power. Special carriages will be built to hold four or six people. It is proposed to have five cent fares on the regular lines. The roads around Lowell are so well kept that electric omnibuses in that vicinity may be practicable from a mechanical standpoint, but they will hardly pay financially unless the company obtains its vehicles and batteries at factory cost.

REMOVAL OF BOILER RESIDUE

In order to avoid deposits or incrustations in tubular boilers F. Cove, of 12 Sussex street, London, S. W., recommends the following plan: Once a week overnight put into the boiler a solution of borax, about two ounces to the gallon, and the next day heat up to, say, 80 lbs. pressure, extinguish the furnace and blow the boiler contents right out slowly.

AN OSHKOSH AUTOMOBILE

H. C. Doman, proprietor of the Union Iron Works at Oshkosh, Wis., has com-

pleted a gasolene motor carriage and expects to manufacture others like it. It weighs 700 pounds.

Charles L. Seager, of New York City, is reported to have obtained a concession in favor of the Electric Vehicle Company of New York to operate electric vehicles for hire in the city of Mexico.

Messrs. Rand & Harvel, of Lewiston, Me., have built a motor vehicle which, to judge from an illustration showing two gauge dials on the dashboard, must be a steam carriage.

W. S. Wall, of Richmond, Va., is building a gasolene motor vehicle in which great local hopes are centered.

LOOKING FOR MOTOR AGE TESTS

ENDORSE NOTHING WITHOUT MERIT

Editor The Motor Age.—We are of the opinion that a trade paper devoted to the motor trade industry must be careful in advancing any opinion as to the merits of different classes of automobiles now mostly in the experimental stage. If you will teach the public that you will endorse nothing unless it has merits, your paper will be all the more appreciated by the general public. However, this method will no doubt meet with objections from those who have no other motive in view than floating large stock companies without any substantial merit back of the same.

In reference to our own position, would say that we are not yet ready to make a public demonstration of what we have to offer. We take the same view as you in reference to putting goods on the market. We do not care to put out any of our vehicles without knowing first that they are as near perfection as the same can be made. We think that we have reached this point now and shall soon be advising the public through your paper, as well as other mediums, of this fact. In the meantime we would like to have you send us an outline of your plan of testing.

It should be said, however, right here that at the present time we build nothing but electric vehicles. Yours truly,

UNITED STATES AUTOMOBILE CO.,
Frank Mossberg, President.

TESTS WILL MAKE SALES

Editor The Motor Age.—I wish to congratulate you on your stand taken in Motor Age. Being much interested in motor vehicles, I have been taking other journals for some time, and came to the conclusion that it was time to buy, and for that purpose made a special trip east, expecting to see factories running night and day and carriages ready for delivery. But when I landed these immense plants working hundreds of men could not be found. And all said "over-sold." Still, you could not find where they were sold, and it was surprising to learn how many were made for "foreign countries," where they could not be seen.

I am in the market for three two-seated carriages holding four persons. But when you write these firms, they have no catalogues or accurate information, and generally end up, saying, "Send $200 or $300 in advance." I will stand by the Motor Age for three copies per week, as the people need a paper that is honest, and I hope the manufacturers will give you tests like you write of in September 26 issue, as it will enable us to see more clearly. And people having practical carriages ought to show up, as it will make them many prompt sales. Yours truly,

J. S. KNIGHT,
Box 440. Kansas City, Mo.

BOOM PUBLICATIONS NOT WANTED

* * * We are heartily in sympathy with the position you have taken in this matter, and you can depend upon this company giving you what assistance it can to help sustain you in that position. We are pleased that one journal has dared to call attention to the "boom publications" which are so misleading to the would-be purchaser, and we hope that all manufacturers of motor vehicles will give you the same support. Yours very truly,

F R. ALDERMAN,
Secretary Detroit Automobile Company.

POLICY WHICH IS PRINCIPLE

Gentlemen:—Copies of Motor Age Nos. 3 and 4 duly received here. Am very much pleased with "policy" of Motor Age. Yours truly,

HOMER H. WARD.
Parkersburg, W. Va., Oct. 7.

FOR SALE—A second-hand Automobile. Price right. GILBERT J. LOOMIS, Westfield, Mass.